Montana Department of Environmental Quality
Permitting and Compliance Division
Industrial and Energy Minerals Bureau

Coal and Uranium Prospecting Handbook For Drilling Operators

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INTRODUCTION

This Handbook specifically addresses drilling operations. For specific "Test Pit" permit and compliance assistance, please refer to ARM 17.24.1004 and 1006, and to the various departmental mine permit/application guidelines.For assistance in complying with prospecting activities requiring a "Notice of Intent to Prospect", please refer to the Departments PROSPECTING HANDBOOK - ENVIRONMENTAL AND ENGINEERING ACTIVITIES.

For information regarding other prospecting activities, or for other prospecting-related questions, please contact the Department.

Prospecting permit requirements are founded upon the following sections of the Montana Code Annotated (MCA) and Administrative Rules of Montana (ARM):

82-4-203 (25) MCA

"Prospecting" means:

(a) the gathering of surface or subsurface geologic, physical, or chemical data by mapping, trenching, geophysical, or other techniques necessary to determine:

(i) the quality and quantity of overburden in an area; or

(ii) the location, quantity, or quality of a natural mineral deposit; or

(b) the gathering of environmental data to establish the conditions of an area before beginning strip- or underground-coal-mining and reclamation operations under this part.

82-4-226 MCA

Prospecting Permit.

(1) Except as provided in subsection (8), prospecting by any person on land not included in a valid strip-mining or underground-mining permit is unlawful without possessing a valid prospecting permit issued by the Department as provided in this section. A prospecting permit may not be issued until the person submits an application, the application is examined, amended if necessary, and approved by the Department, and an adequate reclamation performance bond is posted, all of which prerequisites must be done in conformity with the requirements of this part.

(2) An application for a prospecting permit must be made in writing, notarized, and submitted to the Department in duplicate upon forms prepared and furnished by it. The application must include among other things a prospecting map and a prospecting reclamation plan of substantially the same character as required for a surface-mining or underground-mining map and reclamation plan under this part. The Department shall determine by rules the precise nature of the required prospecting map and reclamation plan. Any applicant who intends to prospect by means of core drilling shall specify the location and number of holes to be drilled, methods to be used in sealing aquifers, and other information that may be required by the Department. The applicant shall state what types of prospecting and excavating techniques will be employed on the affected land. The application must also include any other or further information that the Department may require.

(3) The application must be accompanied by a fee of $100. This fee must be used as a credit toward the strip-mining or underground-mining permit fee provided by this part if the area covered by the prospecting permit becomes covered by a valid surface-mining or underground-mining permit obtained before or at the time the prospecting permit expires.

(4) Before the Department gives final approval to the prospecting permit application, the applicant shall file with the Department a reclamation and revegetation bond in a form and in an amount as determined in the same manner for strip-mining or underground-mining reclamation and revegetation bonds under this part.

(5) In the event that the holder of a prospecting permit desires to strip mine or underground mine the area covered by the prospecting permit and has fulfilled all the requirements for a strip-mining or underground-mining permit, the Department may permit the postponement of the reclamation of the acreage prospected if that acreage is incorporated into the complete reclamation plan submitted with the application for a strip-mining or underground-mining permit. Any land actually affected by prospecting or excavating under a prospecting permit and not covered by the strip-mining or underground-mining reclamation plan must be promptly reclaimed.

(6) The prospecting permit is valid for 1 year and is subject to renewal, suspension, and revocation in the same manner as strip-mining or underground-mining permits under this part.

(7) The holder of the prospecting permit shall file with the Department the same progress reports, maps, and revegetation progress reports as are required of strip-mining or underground-mining operators under this part.

(8) Prospecting that is not conducted in an area designated unsuitable for coal mining pursuant to 82-4-227 or 82-4-228 and that is not conducted for the purpose of determining the location, quality, or quantity of a natural mineral deposit is not subject to subsections (1) through (7). In addition, prospecting that is conducted to determine the location, quality, or quantity of a natural mineral deposit and that does not substantially disturb the natural land surface is not subject to subsections (1) through (7). However, a person who conducts prospecting described in this subsection shall file with the Department a notice of intent to prospect that contains the information required by the Department before commencing prospecting operations. If this prospecting substantially disturbs the natural land surface, it must be conducted in accordance with the performance standards of the board's rules regulating the conduct and reclamation of prospecting operations that remove coal. The Department may inspect these prospecting and reclamation operations at any reasonable time.

ARM 17.24.1001

PERMIT REQUIREMENT

(1) A person who intends to prospect for coal or uranium on land not included in a valid strip or underground mining permit must obtain a prospecting permit from the department if the prospecting will:

(a) be conducted to determine the location, quality or quantity of a natural mineral deposit and will substantially disturb, as defined in ARM 17.24.301, the natural land surface; or

(b) will be conducted on an area designated unsuitable for strip or underground coal mining pursuant to 82-4-227 or 82-4-228, MCA.

Prospecting operations that require a permit are generally conducted by either drilling or by excavating (see Appendix 3).

All prospecting activities that do not require the obtaining of a prospecting permit (see Appendix 3) must be conducted in compliance with ARM 17.24.1018 NOTICE OF INTENT TO PROSPECT.

This handbook is intended to assist operators or potential operators in applying for, obtaining and maintaining a valid Montana coal or uranium prospecting permit. It is also designed to help the operator avoid compliance problems in the field, and to meet the reporting requirements of ARM 17.24.1001 through 1018.

PROSPECTING PERMIT APPLICATION

Contents

I. **Submit an application on a form provided by the Department, along with a $100.00 filing fee.**

II. **Submit reclamation plan:**

A. Respond to all of the sections under ARM 17.24.1001-1015 and ARM 17.24.1129.

B. Apply for permits on a county basis (one permit for each county within which prospecting will be conducted).

C. Include a list of surface and mineral owners names and addresses for the proposed affected areas. (THESE MAY BE SHOWN ON MAPS)

NOTE: ARM 17.24.1001(2)(j) requires that the applicant demonstrate his legal right to explore the lands in question. This includes all required exploration or use licenses for unleased federal or state coal, and exploration plans for leased federal tracts. ***Note also that valid permission is required for drilling in right-of-way, borrow pits, etc..***

D. Include a letter (or letters) identifying cultural or environmental resources, or plant or animal species of special concern, if any.

E. Submit maps in duplicate and certify as follows: **"I, the undersigned, hereby certify that this map is correct and shows to the best of my knowledge and belief that all the information required by Part 2, Chapter 4, Title 82, MCA."** NOTE: THIS STATEMENT MUST BE NOTARIZED

III. **Submit reclamation bond.** (SEE BOND SECTION, P. 7, FOR REQUIRED BOND)

IV. **Everything except fee must be submitted in duplicate.**

V. **Request a departmental predrill inspection of affected area.** (Department must have a complete application form prior to inspection. Applicant must arrange landowner approval before inspection.)

VI. **The package must include a board resolution, power of attorney, or affidavit designating and authorizing the individual signing the application as entitled to indemnify the company.**

PROSPECTING PERMIT APPLICATION

Drillholes, Wells, Roads and Mud Pits

Prospecting permits are designed to prevent adverse impacts to health, human safety and the environment due to prospecting activities. The pre-drilling site inspection can check for potential impacts ahead of time. The drilling, reclamation and drillhole abandonment requirements assure that the sites/drillholes meet specific post-exploration standards.

Ideally, every operator will properly carry out prospecting, reclamation and abandonment obligations. The bonding requirement, however, offers a last-resort guarantee that if an operator fails to prospect, reclaim, or abandon properly, the state can complete the necessary work. Bonding levels are based upon the estimated cost of doing that.

Because of the inspection and bonding requirements, it is extremely important that the location and degree of actual disturbance match what is in the permit. This is probably the most common source of noncompliance problems with permit holders. Items 1 through 6 (below) are specific to drilling operations, and are intended to assist the operator in preparing a permit package that will comply with the rules and permit requirements while allowing operational flexibility in the field:

(1) **Drillhole Locations:** Since drilling impacts are site-specific, the prospecting permit is granted on that basis. The pre-drilling inspection evaluates specific sites, and will cover at least a 100' radius around each staked hole location, as well as other proposed disturbance areas (roadwork etc.). Once a site is permitted and inspected, the disturbance must be kept within the inspected area....the 100' radius, in the case of a drillhole. Each hole drilled, even if only partly completed, must be permitted. Drilling or roadwork in other than permitted locations constitutes a violation.

(2) **Alternative Locations:** If the possible need for alternative (substitute) drilling sites is anticipated, they should be requested in the permit application, specified on the map, and subjected to pre-drilling inspection. Alternative sites do not require additional bonding, as long as the total number of sites drilled or otherwise disturbed does not change. Drilling sites can also be substituted later by requesting a revision to the permit, but will need pre-drilling inspection and approval before drilling.

(3) **Twinned Drillholes:** In project areas where a company anticipates problems such as lost circulation due to scoria or gravel, the company can permit "twin holes." These extra holes must be bonded (unlike alternative locations), and must be drilled within the same 100' radius circle originally permitted. No additional pre-drilling inspection is necessary.

Where there is any doubt about drilling conditions, we recommend that operators request and bond for at least a few extra twin holes. That will assure the operator the ability to react to on-site conditions, while staying in compliance with the rules.

Monthly and annual reports must indicate the number and exact location of all the holes that were drilled, and identify all problem holes (partially completed holes, artesian conditions, lost circulation, etc.) and twins.

(4) **Twinned Core Holes:** Twinned core holes can be bonded, permitted, and used at permitted locations. This allows the exploration company to drill and log a pilot hole, then put in a core-hole based upon that information. Such holes must be bonded, and must be located within the 100' radius originally permitted, or relocated to another approved location.

All twinned core holes must be reported along with their mapped location on all reports and maps.

(5) **Monitor Wells:** Monitor wells, or other drillholes which are to be converted to monitor well use, must be identified in the application and on the maps. All monitor wells must be installed by a licensed Montana monitor well constructor, per the provisions of Title 36, Chapter 21, A.R.M.. Methods and materials to be used in well construction must be approved by the Department prior to construction.

The operator may, based upon on-site observations of hydrological conditions, make the ad-hoc decision to convert additional holes to monitor well use, or to elect not to convert some holes as originally planned, as long as the drilling and completion methods are according to the permit. Such changes must be reported in the monthly and annual reports. (See "Reporting".)

All monitor wells must be completed according to the standards set forth in Title 36, Chapter 21, Subchapter 8 (Board of Water Well Contractors rules), with the exceptions noted in Subchapter 8, Part 802(9) and Title 26, Chapter 4, subchapter 10. (Note, for example, that chips or cement are the only acceptable abandonment materials allowed by subchapter 10, except as otherwise approved by the Department.) Completion records sufficient to verify compliance with this requirement must be submitted with the annual and monthly reports of activity under the prospecting permit.

SPECIAL NOTE: *If it is anticipated that monitor wells may at some point be desired to be converted to water-well use, they must be constructed to meet the minimum water-well construction standards spelled out in Title 36, Chapter 21, Subchapter 6. Final approval of such transfers also requires Board of Water Well Contractors' approval, and evidence of compliance with Montana DNRC water rights statutes. (See Section on "Water Well Transfer", P. 20.)*

Plans for conversion should, to the extent possible, be identified in the permit application. Approval may also be requested at a later date, assuming that the above requirements have been met. GIVEN THE MORE STRINGENT STANDARDS FOR WATER WELL TRANSFERS, OPERATORS SHOULD PLAN IN ADVANCE IF TRANSFERS ARE A POSSIBILITY.

(6) **Roads and Trails:** Most drillhole access is assumed to be by existing roads and trails, with some cross-country travel. Operators should try to plan accordingly. It is recognized, however, that some parts of existing roads or trails may require maintenance or modification in order to get heavy drilling equipment to the sites. In extreme cases, site access may require the construction of new roads or trails. Any such

modification or construction must be included in the permit application, and bonded according to the appropriate schedule.

(7) **Mud Pits:** The Department encourages the use of portable mud pits or air/water injection, where feasible, to minimize site disturbance. If drilling conditions dictate the use of dug mud pits, they must be permitted and bonded in advance. An operator may permit mud pits at unspecified, permitted drill sites, to be selected in the field, as long as this is stated in the permit and the pits are bonded. (See Appendix 2, Format for Prospecting Permit Application, for additional information on permitting mud pits.)

Any of the above options are available for prospecting permits; however, they must be requested at the time of permit application or requested as an amendment to the permit. Failure to do so is a major cause of violations.

Cultural Resources

Each prospecting permit application must contain a letter from the Montana State Historic Preservation Office listing any known cultural or historical sites within the proposed prospect area. The SHPO may also recommend that a survey be made of the area prior to any disturbance.

For routine prospecting proposals, DEQ shall conduct a surficial inspection for cultural resources as a part of the required pre-drilling inspection, for all areas of proposed disturbance (permitted location, access routes, etc.). This inspection will consider the nature of the disturbance (unimproved vs. improved access, excavations, etc.). If any indications of cultural resources are found, the Department may dictate that the site or access be relocated or modified.

Environmental Resources

Each prospecting permit application must contain a letter from the appropriate agencies addressing whether the area has any Aspecial, exceptional, critical or unique characteristics≅ [ARM 17.24.1001(2)(b)], and significant fish and wildlife species or habitats [ARM 17.24.1001(2)(d), (e)].

PRE-DRILLING INSPECTIONS

1. **A pre-drilling inspection is necessary when:**

   A. A new prospecting application is submitted.

   B. An amendment involves disturbance of sites or areas not previously inspected.

2. **Inspections are not necessary for amendments when** additional twinned drill or core holes will be drilled on previously permitted sites.

3. **The pre-drilling inspection will concentrate on the following items:**

   A. Possible impacts of the proposed prospecting activities on the known groundwater regime in the area. This could, in special cases (such as artesian conditions) include the need for special completion or abandonment requirements.

   B. Terrain (general description, accessibility) and season of anticipated activity.

   C. Any special or unique features (geological features, wildlife habitat, plant or animal species, etc.).

   D. Vegetation community at each site (dominant species, weed species if present, % bare ground, general condition of site.

   E. Cultural resource features, if any.

   F. Specifically, the inspection will focus on whether any of the drilling or other disturbances will be in close proximity to the following features:

      * 100 feet from a dry or flowing stream channelway. *(If monitor wells are planned for the purpose of evaluating alluvial flow, a variance may be granted when the appropriate completion techniques are to be employed.)*
      * Archeological, cultural or historical sites.
      * A critical geological site.
      * Lakes or reservoirs.
      * Ponds, springs or wetlands
      * Known critical wildlife habitat (raptor nests, grouse dancing grounds, etc.).
      * A unique or fragile plant community.
      * Windmills.
      * A zone of influence for supply or monitor wells.
      * Power line corridors and/or support structures.
      * Roads.
      * Underground cable corridors.
      * Underground pipelines.
      * Cemeteries.
      * Churches.

* Occupied dwellings.
* Schools.
* Public buildings.
* Public parks.
* Communities.
* Reservoirs.
* Military installations.

Every hole or other disturbance that is located in such a way that it may negatively impact any of the above or other features may have to be relocated, or prospecting scheduled at a time when seasonal negative impacts can be avoided.

ENVIRONMENTAL ASSESSMENT

For new permits, the results of the field inspection will be written into an Environmental Assessment (see attached copy of a sample EA, Appendix 4). For amendments to existing programs, no additional EA will be required unless the proposed amendment goes significantly beyond the scope of the original EA.

Where environmental impact issues are raised in the field, it is in the applicant's best interest to modify the program to address those issues before the EA is written. Modifications could include such items as relocation of holes or access routes, avoidance of sensitive areas or seasons, special drilling or abandonment methods, or other mitigative measures. The EA will take these measures, as well as the field findings, into account.

If it is determined in the EA that the project will cause unavoidable significant impacts or potential impacts to environmental resources, additional environmental review may be necessary. In cases involving significant impacts, this could trigger the need for an EIS. Factors which could trigger the need for additional study include, but are not limited to:

1. Closely spaced (e.g., centers are less than 200') or very deep (over 500') drilling;

2. Significant adverse impacts to habitat;

3. Impacts to cultural resources;

4. Impacts to sensitive or critical vegetation or animal species;

5. Impacts to special or unique features;

6. Impacts to ground or surface water resources;

7. Long-term impacts to humans or to existing land-use patterns.

PROSPECTING BONDING

Bond requirements are based upon the cost to the Department of reclaiming disturbances, should the operator fail to meet the obligations of the permit. The bond requirements for coal and uranium drilling in Montana are determined by the number of drill holes, plus the acres of related disturbance. Bonding is generally figured using the following guidelines:

1st hole	$2,500.00
Next 4 holes	$1,000.00/hole
Next 10 holes	$ 500.00/hole
Additional holes	$ 100.00/hole
Excavated Mud Pits	$ 100.00/pit
Artesian Conditions	$5,000.00/hole
Disposal Pits	$1,000.00/pit
Road Improvement	$ 200.00 per 1/10 mile
Road Construction	$1,200.00 per 1/10 mile

Drilling disturbance is estimated to be equivalent to 1/10 of an acre disturbance at the surface, and is based upon the cost of reclaiming a single hole located within a 100' radius site. **Additional holes within one site are not allowed unless they are permitted and bonded in advance.**

THE MINIMUM AMOUNT OF BOND WHICH MUST BE SUBMITTED WITH A PROSPECTING APPLICATION AND WHICH MUST BE RETAINED BY THE DEPARTMENT ON AN ACTIVE PERMIT IS $200/ACRE OR $10,000, WHICHEVER IS GREATER.

General Bond Policies

1. Permits are issued on a per-county basis, and bonds must be submitted on a per-county, per-permit basis.

2. ARM 17.24.1005 allows that bond may be provided in the form of surety bond(s), certificates of deposit, negotiable bonds of the U.S., states or municipalities, letter of credit, or cash (ARM 17.24.1101). **(The letter of credit is the most time-consuming form of bond to set up. The Certificate of Deposit or surety bond are easier to process for acceptance in a timely manner.)**

3. Surety bonds must have two signatures:

    a. Principal

    b. Attorney in fact

    c. (Montana resident agent is optional.)

4. Bonds must be submitted on Department forms. (See samples in Appendix 1, or contact the Department for the current form.)

5. For surety bonds, the bonding company must be licensed to write surety bonds in Montana, and be acceptable (as per Federal Circular 570) to write bonds for U.S. Office of Surface Mining (OSM) programs. Bonds may not exceed the limits calculated in Circular 570.

6. Proof of Agency (Bond Resolutions or similar documentation) must be attached to the bond for the company=s signatory. There must also be a Power of Attorney for the bonding company.

7. Amendments requiring additional bonding may be handled by riders to the original bond, or by separate bond instruments.

8. **Excess bonding does not mean that extra holes may be drilled within this excess bond, unless the additional holes have been permitted in the original permit or by approved by amendment.**

Bond Riders

Bond riders are required by the Department under four circumstances:

1. To change the company name,

2. To change the bond number,

3. To increase or decrease the amount of bond, or

4. When existing bonds are to be replaced with new bonds.

When a replacement bond is to be submitted in lieu of an existing one, the Department requires that a RETROACTIVE BOND RIDER be submitted with the new bond. This rider acknowledges retroactive liability for the work carried out prior to the issuance of the new bond. (See Appendix 1 for the form.) This form MUST be included for all replacement bonds.

Bond Forfeiture

Bonding is required to cover the costs the Department would incur if the operator failed to meet the reclamation requirements in the permit, and bonding levels are calculated accordingly. If bond is forfeited, the Department will use it to complete any necessary reclamation work.

DURING DRILLING OPERATIONS

Once a permit is issued, the applicant is required to meet the terms of the permit, from performance in the field to reporting requirements. While all terms of the permit must be met, there are a few aspects of field work which commonly cause problems for the operator and deserve special mention. Some of these are:

1. **Knowing the Terms of the Permit:** It is the responsibility of the operator to assure that the responsible field personnel know and understand the terms of the permit. The operator should remember that ARM 17.24.1001(4) requires that the responsible party in the field, whoever that may be, must have a copy of the permit **on-site**.

2. **Number of Holes Drilled:** As noted in the Application section, drilling disturbance is permitted and bonded on a per-location, per-hole basis. If an operator drills on unapproved sites, or drills additional holes (without having permitted optional locations or extra holes), a violation situation exists.

   If an operator foresees that drilling conditions may mean incomplete holes or lost core and that some holes may need to be re-drilled, or that outcrop or burn patterns may necessitate that additional holes or locations be chosen in the field, that should be factored into the permit and bonding. If unforeseen circumstances occur in the field, contact the Department. In most cases these circumstances can be dealt with without delaying the prospecting program.

3. **Bad Weather and Travel:** Moving from site to site in bad weather is a prime source of problems. ARM 17.24.1006(1) states that travel **must** be confined to existing roads and trails during times when excessive damage or erosion can occur. **Off-trail rutting or severe damage to existing trails in wet weather is a common source of landowner complaints, and an invitation for compliance problems.**

4. **Road and Trail Problems:** Operators should be careful to keep road or trail modification within the permitted areas and levels of intensity. **As in the case of drillholes, the impromptu addition of road or trail modification is an invitation for compliance problems.** Careful groundwork in advance can avoid problems in the field.

5. **Refuse:** Operators should make sure the drilling crew controls and disposes of refuse as required in ARM 17.24.1013(5). This is another common source of landowner complaints.

6. **Drainage Control:** Drillers working with air-mist injection tend to like sites which drain fluids away from the immediate drill-site. It is altogether too easy, however, for fluids to drain into a nearby drainage while drillers are focussed on drilling or core recovery. The Department's pre-drilling inspection will try to highlight sites where control of fluids may require extra care, but it is the job of the responsible party in the field to assure that cuttings and fluids stay out of drainages, and within the permitted site boundaries.

7. **Downhole Abandonment Timing:** ARM 17.24.1005(3)(a) requires that abandonment occur promptly after drilling is completed. Some operators find it more efficient to have a

utility crew reclaiming behind the driller, where bentonite chips are the chosen abandonment medium. This is an acceptable practice, as long as it is not delayed too much. The potential for sloughing or collapse within the drillhole should be taken into account when considering possible delays. If there is a potential problem, the hole should be plugged immediately. Where a delay of a day or more will occur between drilling and downhole abandonment, the operator should provide temporary protection (a large rock, board, etc.) for open drillholes. **The operator should consult with the Department for approval of extended delays.**

8. **Reclamation Timing:** Improper spreading and scattering of cuttings is a common source of problems. With proper dispersal of cuttings, existing site vegetation will often re-establish itself within a season without re-seeding. The operator can try this technique with the provision that if vegetation does not re-establish, later re-seeding, weed control, etc., will be required.

   The Department recognizes that unless water-jetting of air-drilled cuttings or direct (shovel) dispersal from a portable mud-pit is employed, cuttings are often difficult to disperse in the days immediately after drilling. It is permissible to allow cuttings to dry out for a period after drilling, as long as reclamation is not delayed too long.

9. **Gassy or Artesian Conditions:** ARM 17.24.1005 is specific about the use of cement as an abandonment medium for artesian conditions, unless other methods are approved by the Department. Both gassy and artesian wells, however, can pose some difficult conditions. **The Department recommends that if artesian, gassy, or other difficult downhole conditions are encountered, the operator contact Department staff, discuss the situation, and agree upon an approach which makes the most sense for the specific conditions.** Consultation with the Montana Oil and Gas Commission may also be required.

10. **Lost Circulation:** The choice of cement abandonment for holes with lost circulation is based upon a "worst case" scenario where water from a significant flowing zone could flow into a lost circulation zone. The Department recognizes, however, that in some cases, cement may be an expensive and unnecessary treatment for commonly encountered lost circulation zones (in shallow scoria, or in coarse gravels in an alluvial setting). For these types of conditions, bentonite chips are an acceptable and effective method. **It is recommended that where lost circulation conditions are encountered, the operator contact Department staff and agree upon the best approach for the conditions encountered.**

11. **Timely Reporting:** The reporting requirements of the prospecting permit are covered in the following section. A common compliance problem in drilling programs is the failure to file reports by the deadline, usually due to the field manager=s pre-occupation with field problems, or to failure to coordinate between the field program and the office. Operators should assure that the necessary mechanism is in place for the timely filing of complete reports. **If unexpected problems arise, contact the Department to request an extension of time within which to file reports.**

REPORTS

Monthly Progress Reports

Prospecting reporting requirements are stipulated in ARM 17.24.1002. Monthly progress reports must be submitted to the Department for any prospecting activity conducted during a successive 30-day period, by the 15th of the following month, on the forms provided by the Department. All the information requested on this form should be provided. This report is not required for periods of inactivity.

In addition to the routine drilling information specified on the Monthly Progress Report form, the report should also address any of the following:

a. **Location and construction details for any monitor wells installed.**

b. **Location and construction details for any transferred water wells** (see water well section).

c. **Any authorized changes in the original program.** Examples include road improvements, decisions not to complete a hole as a monitor well, to complete a monitor well according to water well standards in anticipation of possible transfer, or to equip a drillhole or core-hole as a monitor well, due to hydrological conditions.

d. **Any significant drilling or hydrological conditions encountered.** These include, but are not limited to, the following:

* Artesian flow
* Gain or loss of circulation (water-bearing zones or lost-circulation zones)
* Gas or other emission from drillhole or waters
* Sidewall collapse or unstable zones
* Voids or caverns
* Drilling fluids or other circulation or drilling media used
* Rig lubricants used during well completions

e. **Completion diagrams/descriptions** for any well installations completed in the period.

f. **Site-specific information** on any significant cultural resources, wildlife habitat of other environmental resources encountered.

Annual Reports

An annual report must be submitted to the Department within thirty (30) days of the permit expiration date. It must be submitted on the form provided by the Department and provide all the information requested.

PROSPECTING PERMIT AMENDMENTS

Exploration companies who wish to increase the number of drill holes, relocate drill holes, delete drill holes, add road construction or improvement, drill pad excavation, mud pit excavation, etc. to their current permit, must do so by an amendment. The amendment request from the permittee, which may be in letter form, must include a description of the proposed activities and the following items:

1. **Certified maps** (in duplicate);

2. **Bond rider, if current bond is insufficient for the proposed activity;**

3. **Listing, by legal description,** of all new holes or other disturbances requested;

4. **List of additional surface owner/lessees** and their addresses, where necessary;

5. New archaeological and fish and wildlife letters if the proposed additional disturbance goes beyond the scope of the original letters.

Amendments involving additional disturbances over the previously permitted level, different types of disturbances, or new or changed locations for proposed disturbances, will require departmental inspection before the activities can be approved.

An Environmental Assessment may be required for an amendment, if the proposed activities are not within the scope of the original EA.

RENEWAL OF PROSPECTING PERMITS

1. Prospecting Permits are issued on a yearly basis. **If a permittee wants to operate for more than a one-year period, he must request renewal of the permit.**

2. The renewal date is always the anniversary date of issuance or of last renewal.

3. **The Renewal Request must be received by the Department at least 120 days, but not more than 150 days, prior to the Annual Anniversary date of the permit.**

4. Renewal requests must be submitted on the form provided by the Department and contain all the information required on the form.

5. A map (in duplicate) must accompany this renewal which shows: all holes permitted, all holes drilled, and all holes added, relocated, or deleted by amendment since permit issuance.

6. A renewal of permit is issued on the same form as an original permit.

7. Acres permitted are carried over from permit to permit upon renewal. "Acres permitted" is the total of all holes permitted since original issuance date.

   Example:

>78 permit -	22 holes	(2.2 acres equivalent)
A001	+3 holes	(0.3 acres equivalent)
>79 permit -	25 holes	(2.5 acres subtotal)
A001	+15 holes	(1.5 acres equivalent)
A002	+ 5 holes	(0.5 acres equivalent)
	+ 1.5 acres of road construction	
>80 permit -	45 holes	6.0 acres total disturbance

8. Maps may be omitted if no drilling or amendments occurred during the previous permit year.

TERMINATION OF PROSPECTING PERMIT

When a Prospecting Permit is issued and the permittee decides not to drill any holes under it and wishes the total bond released before the one year issuance period is up, then the permit must be terminated before full bond release may be granted.

The only permits which may be terminated are those for which no exploration activity has been conducted under the permit, or those that have had another permit assume the liability of any exploration activity which was conducted under the original permit.

In either case, the permittee must submit an "Application for Termination of Prospecting Permit."

ASSIGNMENT OF PROSPECTING PERMIT

When a company holding a prospecting permit wishes a name change or when a company wants to transfer its permit to another subsidiary or another company, a permit assignment must be completed. This assignment procedure is covered under ARM 17.24.1002(3).

The permit assignment consists of:

1. **Completion of assignment form,**

2. **Submittal of name change rider for current bond or a new bond in the new name** with a rider attached which states:

   This bond shall be retroactive in effect to guarantee faithful performance of all obligations of the act, the rules and regulations adopted pursuant thereto, and the respective prospecting and reclamation plan, incurred as a result of operations conducted pursuant to permit no. _____ from the date of issuance of that permit on _____ and the subsequent renewals.

3. Identification of the responsible party for the proposed assignee, per ARM 17.24.1001(2)(a).

PROSPECTING BOND RELEASE

Full bond release may not be sought until 5 years following the completion of reclamation activities, to allow time for full revegetation. A company may, however, wish to seek **partial bond release** prior to that time in order to reduce its bonding obligations, or to free up bond to be applied to subsequent amendments to the permit.

Partial Bond Release: Partial bond release may be sought prior to the 5-year eligibility for full release. It may be sought for a variety of reasons. In general, it applies where individual steps in the reclamation process have been fully completed, where portions of reclamation obligations have been completed, or where special bonding provisions (such as artesian conditions) are no longer necessary. The provisions for partial bond release are outlined below:

1. **For active permits, a minimum of $10,000 bond must be maintained at all times.**

2. **Downhole Reclamation:** The operator may apply for partial release for department-approved downhole reclamation, when the Department can verify by inspection that proper downhole abandonment procedures were followed. The schedule for partial bond release for downhole reclamation is:

    a. 5 holes or less - $1,000 is retained as a minimum

    b. 6-10 holes - $1,000 plus $100/hole for holes 6-10.

    c. 10+ - $2,000 plus $40/hole for each hole in excess of 10.

    If a few holes are found to be in unsatisfactory condition, the entire bond amount may be retained to guarantee the reclamation of the few bad holes.

3. **Other Bonded Features:**

    a. Artesian Conditions: The $5,000/hole contingency bond may be released after inspection verifies that artesian conditions are not present, or that they have been properly controlled by abandonment procedures. The Department retains the remaining drillhole bond as per the standard schedule.

    b. Excavated drill pads: 60% of the bond may be released after inspection verifies re-grading, retaining 40% of the bond.

    c. Road Improvement: If the road is to be left in an improved condition, then full bond release may be granted pending an inspection.

    d. Road Construction: In cases where the road is to be retained, then full bond release may be granted pending inspection. In cases where the road is to be reclaimed, then 40% of the bond is retained for the five year liability.

    e. Water Well Transfer: See Water Well Transfer section. Only the hole can be released on a transfer, not associated disturbances such as mud pits.

f. Observation/Monitor Wells: In cases where exploration drill holes are transferred to observation/monitor well status, full bond is retained for the life of the well.

g. Disposal Pits: Partial release may be obtained after re-grading. 40% of the bond is retained until final release.

h. Other cases not listed: 40% of the bond is retained, but never less than $200 per acre or $10,000, whichever is greater.

Full Bond Release: Full bond release may not be sought until 5 years following the completion of reclamation activities, to allow time for full revegetation and a full reclamation evaluation. A company may, however, wish to seek **partial bond release** prior to that time in order to reduce its bonding obligations, or to free up bond to be applied to subsequent amendments to the permit. **Full bond release** may be made if:

1. No holes have been drilled,

2. Bond has been replaced by another bond in the same amount and is made retroactive to issuance of the permit. (See Assignment section)

3. The area disturbed is determined, **five years or more after the last disturbance,** to have been successfully reclaimed according to:

   a. the Montana Strip, Underground Mine Reclamation Act;

   b. the Rules and Regulations, and;

   c. the permittee's reclamation plan. (Complete request submitted and inspection conducted.)

NOTE: In the event that corrective work is required for a site following reclamation, the 5-year time period for bond release eligibility does not necessarily start over, though the company may have had to reseed or otherwise repair the site(s).

If bond release is denied, the company may continue to request full bond release on an annual basis until reclamation requirements are satisfied.

PROSPECTING PERMIT BOND RELEASE PROCEDURES

1. **Complete the form, "Request for Reclamation Bond Release"** (one form per permit per bond release request).

   a. **Acres permitted or disturbed**

   i. are equal to 10% of the total number of drill holes or 0.1 acre/hole (e.g., 100 holes drilled = 10 acres of disturbance), plus,

   ii. associated disturbances such as roads, mud pits, disposal pits, etc. Acreage and associated bond amounts for these disturbances will be calculated by the Department.

   b. **The number of drill holes/acres and the acreage of associated disturbance permitted** can be found on your most recent permit.

   c. **The number of drill holes and associated acreage disturbed** refers to the total number of holes drilled (and other disturbances) that are still bonded.

   d. **Bonding questions refer to outstanding bond only.**

   e. **The permit number** is located in the top right hand corner of your most recently issued or renewed permit. The activity conducted was prospecting unless otherwise indicated by the Department. Indicate mineral.

   f. **Categories 1 and 2** refer to the number of undrilled holes/acres undisturbed and the number of drilled holes/acres disturbed, respectively, for which you are seeking bond release.

   g **Submit, in duplicate, certified (by a geologist or a professional engineer) and notarized maps** indicating the locations of all prospecting disturbances (i.e. overland travel routes, drill sites, improved roads, mud pits, disposal pits, test pits, etc.). The maps should be at least as good as United States Geological Survey Topographic Quadrangle maps. Please make maps legible as the Department uses them in the field. If you no longer have maps, please contact the Department for assistance. *Transposing data from one map to another may seriously affect the quality of your submittal and subsequently the timeliness of your bond release.*

2 **Follow the instructions included in ARM 17.24.1017:**

   a Present all the information included on the attached sheet, **"Public Notice Reclamation Bond Release"**, send letters of notification only to affected surface owners and county commissioners of the county for which you were issued a permit.

b Publish the completed "Public Notice Reclamation Bond Release" for four (4) consecutive weeks in the above mentioned county's local newspaper. A list of newspapers is available from the Department.

c. **Copies of the required letters and an affidavit of publication must be submitted as part of the application package, before bond can be released.**

BOND RELEASE INSPECTIONS

Bond release inspections are required for all bond release requests, unless the items in question have been verified by an earlier inspection, or no activity took place under the permit. Operators, surface owners and other affected parties are encouraged to accompany the Deprtment's representative on the inspection, to verify findings and/or possible corrective measures that may be required.

Partial Bond Release Inspection:

1 **A partial bond release inspection is conducted at the request of the company.** Bond cannot be reduced until at least one year has elapsed since the time of initial site reclamation.

2 **The prospector must comply with the procedures outlined in ARM 17.24.1017 of the Rules and Regulations to request the release.** (See bond release section.)

3 **The partial release is based on:**

a Regrading.

b Spreading of cuttings.

c Stabilization of the site (mud pits, etc.).

d Subsurface reclamation.

e Trend towards successful revegetation.

4 **Examples of specific problems and solutions:**

a Drilling pad unreclaimed - regrade, topsoil, and seed.

b Cuttings greater than 2" - cuttings need raking; spreading to less than 2", and seeding.

c Mud pit subsided - backfill, regrade, and reseed.

d Unplugged drill hole - plug according to Rules and Regulations.

e. Sunken plug - backfill with topsoil in agricultural field or cement on all other sites.

f. Undeveloped water well - develop it or abandon according to ARM 17.24.1005.

g. Artesian well not properly plugged - plug properly, drill it out if necessary and re-cement.

h. No vegetation - disturbed site needs preparation and seeding.

Full Bond Release Inspection:

1 **A full bond release inspection is conducted at the request of the company**, but bond cannot be released until at least 5 years has elapsed since the time of initial seeding.

2. **The operator must comply with the provisions of ARM 17.24.1017 before the bond may be released.**

3. **Full bond release is based on:**

   a Compliance with the downhole requirements of ARM 17.24.1005.

   b Successful revegetation.

   c. Demonstration by the Department, per ARM 17.24.1114 (1)(c), of whether pollution of surface or ground water is occurring or is likely to occur in the future, as a result of the drilling and reclamation activities.

   d. Compliance with all permit conditions and requirements.

4. **Corrective measures:**

   If any corrective measures are necessary, the permittee shall be contacted and advised of the reclamation necessary to bring the drill holes, etc., into compliance.

WATER WELL TRANSFER

1 A surface owner request form (supplied by the Department) must be submitted along with the permit application. This request is tied to the respective prospecting permit.

2 The hole must be either cased and suitably developed for use as a water well or plugged (to Department specification) before the drill rig leaves the project area, not to exceed 60 days since the time of initial drilling. (The project area will be the county in which the permit was issued, unless otherwise approved by the Department.)

3 Drill holes pending completion as water wells, observation wells, and holes completed as water wells, are to be shown on monthly reports.

4 The monthly report will show as a minimum for water wells transfer:

- a Depth of the drill hole.
- b Depth to zone of water production (major producing zone).
- c Type of casing (steel, pvc, etc.).
- d Method of completion.
- e Legal description of well.
- f Whether the well water quality and/or quantity was analyzed. If so, include the analysis.

5 The water well will not be officially transferred until the following is met:

- a ARM 17.24.1005(3)(d) is completely addressed.
- b A field inspection has been made to verify the well's completion or plugging.

APPENDIX 1

Operators= Sample Prospecting Forms

1. **Application for Prospecting Permit**
2. **Prospecting Bond Form (2 pages)**
3. **Monthly Progress Report Form**
4. **Annual Prospecting Permit Report Form**
5. **Request for Renewal**
6. **Prospecting Surety Rider Form**
7. **Request for Reclamation Bond Release**
8. **Sample Public Notice**
9. **Instructions for Sample Public Notice**
10. **Request for Reclamation Liability Release**
11. **Application for Termination of Prospecting Permit**
12. **Assignment for Prospecting Permit (Form)**
13. **Application for Transfer of Well**

APPENDIX 2

Sample Reclamation Plan for Application

APPENDIX 3

Decision Chart - Mining Permit, Prospecting Permit or Notice of Intent?

Decision Chart - Mining Permit, Prospecting Permit or Notice of Intent?

ARM 17.24.1001 PERMIT REQUIREMENT,
ARM 17.24.1001A NOTICE OF INTENT TO PROSPECT AND
ARM 17.24.1014 AND 17.24.1016 TEST PITS

---

(1) Activity meets the definition of "Prospecting" [82-4-203 (25) MCA]?

NO - Prospecting Permit or Notice of Intent to Prospect (NOI) Not Applicable.

YES - Proceed to item **(2)**

(2) Activity to be conducted on land included in a valid strip-mining or underground-mining permit?

YES - Please refer to notification, reclamation and reporting requirements contained in the mining permit.

NO - Proceed to item **(3)**

(3) Will the coal or uranium prospecting activity take place on lands designated as unsuitable for mining?

NO - proceed to **(4)**

YES - proceed to **(6)**

(4) Will coal or uranium location, quantity or quality information be generated as a result of the prospecting activity?

NO - Proceed to item **(7)**

YES - Proceed to **(5)**

(5) Will the activity result in "Substantial Disturbance" to the natural land surface [ARM 17.24.301(114)]?

NO - Proceed to item **(7)**

YES - Proceed to item **(6)**

(6) Will the prospecting be accomplished by excavation?

NO - Apply for a Prospecting Permit. Refer to ARM 17.24.1001 and incorporated rules.

Yes - Apply for a Prospecting Permit. Refer to ARM 17.24.1014 and 17.24.1016 (Test Pit Permitting), and incorporated rules.

(7) Is the Coal or Uranium prospecting related activity to take place on the land surface?

NO - NOI not applicable

YES - Proceed to item **(8)**

(8) Does the activity constitute "Substantial Disturbance" (as defined in ARM 17.24.301(114)?

NO - File a NOI in compliance with ARM 17.24.1018(3). ARM 17.24.1018(1), (2), (5), and (7) also apply.

YES - File a NOI in compliance with ARM 17.24.1018 (4). ARM 17.24.1018(1), (2), (5), (6), and (7) also apply.

Appendix 4

Sample Environmental Assessment Form

Staff Instructions Section

PRE-DRILL INSPECTIONS

OFFICE PREPARATION:

1. *Do not make an inspection unless the application is complete with accepted bond, letters, and approved maps.*

2. *The proposed prospecting activities should be carefully evaluated in light of the known groundwater regime in the area, for any potential for harm to groundwater resources, or for possible special drilling, completion or abandonment requirements. Corroborating information should be sought from sources such as the Montana Bureau of Mines and Geology, USGS, etc., where appropriate.*

3. *Before leaving the office, check the maps and see that each hole or other disturbance is not plotted in or within:*

    a. *100 feet from a dry or flowing stream channelway. If monitor wells are planned for the purpose of evaluating alluvial flow, a variance may be granted when the appropriate completion techniques are to be employed.*

    b. *An archeological, cultural or historical site.*

    c. *A critical geological site.*

    d. *Lakes or reservoirs.*

    e. *Ponds, springs or wetlands*

    f. *Known critical wildlife habitat.*

    g. *Windmills.*

    h. *A zone of influence near supply or monitor wells.*

    i. *Power line corridors and/or support structures.*

    j. *Roads.*

    k. *Underground cable corridors.*
    l. *Underground pipelines.*

m. Cemeteries.

n. Churches.

o. Occupied dwellings.

p. Schools.

q. Public buildings.

r. Public parks.

s. Communities.

t. Reservoirs.

u. A unique or fragile plant community.

v. Military installations.

Every hole or other disturbance that is plotted in such a way that it may negatively impact any of the above or other features, must be field inspected and may necessitate relocation, or an EIS.

THE PRE-DRILL FIELD INSPECTION:

1. Record the following information per inspection:

a. Re-evaluate the presence of items in I(A))6) above.

b. Vegetation community at each site (dominant species, weed species if present, % bare ground, general condition of site.

c. Terrain (general description, accessibility).

d. Any special or unique features (geological features, wildlife habitat, etc.).

e. Special hole plugging procedures to be used.

f. Cultural resource features, if any.
g. Is a PER or EIS necessary? (If so, see PER/EIS section.)

THE PRE-DRILLING INSPECTION REPORT: *The pre-drilling inspection report will consist of two parts:*

1. *Field inspection checklist (environmental action checklist form).*

2. *Memo listing findings, stipulations, and recommendations. The memo will be sent to the Prospecting Program Supervisor. If problematic areas are evident within a specific project, a PER or EIS may be necessary. (See PER/EIS section.)*

(See appendix for examples and forms.)

NOTE: An inspector CANNOT give anyone permission to drill until the Chief, Industrial and Energy Minerals Bureau has signed the permit. Verbal approval to proceed may be given after the permit has been signed.

PROSPECTING BONDING

SURETY BOND:

1. *Power-of-attorney must be attached to bond - State Auditor will not accept it without.*

2. *Send to State Auditor for approval.*

3. *Send to the Bureau Chief (for approval).*

4. *Riders need to be approved by the Bureau Chief.*

5. *Original is kept in fire-proof safe, with a copy in the permit file.*

CERTIFICATES OF DEPOSIT:

1. *Certificates of Deposit are retained in fire-proof safe, with a copy in the permit file.*

2. *Assignment form must be completed, approved by Bureau Chief, and the original retained in the fire-proof safe, with a copy in the permit file.*

CASH BOND:

1. *Check given to Cashier, deposited, and held until release granted.*

2. *When released, memo written to Cashier requesting a refund.*

PROSPECTING PERMIT ISSUANCE

After the bond, application, Environmental Action Checklist (or PER), and inspection have been completed, the prospecting permit is issued:

VI Permit numbering system -

A permit is given a number according to the consecutive numbering system in application and permit book (Helena);

B the first two digits of the issued number represent the year of issuance, the remaining digits represent the consecutive number;

C when the permit is renewed (annual procedure), the year is changed and an "R" is attached to the number to indicate renewal.

Example: 77181 - original permit
78181R - "1978" Renewal
79181R - "1979" Renewal

VII Permit form -

A is completed by the Department as shown in the example;

B approved by the Bureau Chief;

C cover letter is sent to the permittee with a copy of the permit; original permit stays in the file, copy to the Billings' files.

3. Term of Permit -

a. The (date of required renewal) for every prospecting permit shall be one year from the date of issuance or last renewal.

b. Every permit must be renewed annually, or shall lapse permanently into inactive status. (See section on "Renewal of Permits".

DURING DRILLING

ON-SITE INSPECTION DURING DRILLING:

All drilling activities will be inspected while they are being carried out, instead of deferring inspection until after the fact. Inspectors should visit enough sites or observe enough activities to establish that a consistent pattern of compliance exists for the program. Specifically, inspectors should be able to ascertain that:

1. *The driller is using the proper materials and methods when abandoning each hole, or when completing monitor wells.*[1]

2. *The topsoil has been salvaged and stockpiled properly when any excavation has been done.*

3. *Buffers are being adhered to.*

4. *Cuttings are not entering channelways.*

5. *All special terms and conditions of the permit are being adhered to.*

COMPLAINTS:

If a complaint is received, an inspection will be made. All complaints will be followed up with appropriate memos and letters. Complaints should be made in writing to the Department. (17.24.1204)

PROSPECTING PERMIT AMENDMENTS

1. *Evaluate the proposed amendment and original EA, to see if the proposed renewal goes beyond the scope of the EA. If not, no additional EA is required for the amendment. (Note this in your recommendation for approval.)*

2. *The amendment is written up (see example) and approved by the Bureau Chief. A cover letter is to accompany a copy of the amendment.*
3. *Amendment numbers are consecutive within a specific permit year;*

Example:	*79023R - A001*	
	79023R - A002	*3 amendments issued under*
	79023R - A003	*1979 permit*
	80023R - A001	*1 amendment issued under 1980 permit*

4. *The original amendment goes in the Helena files and a copy to Billings files.*

[1] Let's get away from the "abandonment fluid" wording.

TERMINATION OF PROSPECTING PERMIT

1. *This form will need to be rewritten by one of our attorneys if it is used for a permit terminated because of another permit assuming the liability.*

2. *After a complete termination application is received, the "Order Terminating Prospecting Permit" is completed and signed by the Bureau Chief. After this order is signed, full bond release may be granted or the bond transferred to another permit by means of a Surety Rider.*

ASSIGNMENT OF PROSPECTING PERMIT

1. *Upon receipt of the completed form and the amended or new bond, the Assignment form is sent to the Bureau Chief for approval.*

2. *The existing permit does not need to be modified for the new corporate entity.*

3. *When renewal comes up for the permit, then it is issued to the new name or company.*

PROSPECTING PERMIT BOND RELEASE PROCEDURES

PROCESSING OF BOND RELEASE REQUESTS:

I Send a copy of the Release Request to the Billings Office.

II Check to see that the Release Request is complete (refer to 17.24.1111 and 17.24.1112 ARM)

III Make sure that the bond number and amount are correct.

IV Enter the release request date and any other pertinent information on TABLE 1.

V Check the field inspection requirements/status for the permit. If additional inspection is required, check approximate schedule window and send landowner notification letters accordingly.

VI When project is inspected and approved for release, send out the County Commissioner notification letter. YOU MUST WAIT 30 DAYS FROM THE COMMISSIONERS RECEIPT OF THAT LETTER BEFORE RELEASING THE BOND unless the Commissioners respond before that date.

REGARDING COUNTY COMMISSION NOTIFICATION: The requirement that the company notify county commissioners of its intent to seek release, as part of its request package, is in 17.24.1111. 17.24.1114 is the one that requires that DEQ also notify the county of its decision to release. These procedures are designed for mine permits, it seems to me, and are a bit redundant for prospecting. Any way to streamline it??

VII Enter the release date under the column entitled "Release Request Date" on TABLE 1.

VIII Enter pertinent information in file 622.1.

IX Reminders for bond release submittals:

a. Companies with expired permits that are eligible for full bond release should be sent a reminder each year that their bond is eligible. This should be done in January of each year.

Example: During January 1984, the Department should mail letters to all prospecting companies that have expired 1979 permits that were not renewed and request they file for a full bond release. (Sample letter follows.)

b. *Remember, never release enough bond so the minimum for an inactive permit falls below $200.00 per acre and/or $20/drill hole.* ***For active permits, bond must not be allowed to fall below the $10,000 minimum.***

c. *Be certain that all requirements have been met before releasing any bond.*

10. *A cover letter, with copy to bonding company, is to accompany copy of release with copy of the release also going to bonding company. Original release stays in the Helena file and one copy goes to the Billings file.*

BOND RELEASE INSPECTIONS

The goal of bond release inspections is to verify that both the surface and downhole reclamation requirements of the permit have been met. In addition to the requirements of sub-chapter 10, a final decision on bond release must also meet the requirements of 17.24.1114(1). This requires, among other things, a determination of whether pollution of surface and subsurface water is occurring, the probability of future pollution or the continuance of any present pollution, and the estimated cost of abating any pollution.

This may be demonstrated in one of three ways: by contemporaneous, on-site inspection during drilling; by after-the -fact evaluation of downhole abandonment compliance; or by secondary evaluation via a Hydrologic Impact Assessment (HIA):

1. *Where prospecting projects have undergone contemporaneous inspection, sufficient to determine that the operator has followed a systematic pattern of compliance with downhole abandonment and/or well completion requirements, no further confirmation of downhole compliance is required.*

2. *On projects where downhole compliance was not verified by contemporaneous on-site inspections, downhole compliance may be verifiable by using the Winkie diamond drill to core through cement plugs. (See Appendix 1 for further information on Winkie Drill inspections.)*

3. *On projects completed primarily in cropland, or on older projects where successful surface reclamation has severely obscured the locations of cement plugs in slurried holes, the only alternative for locating plugs would be to scrape the drill site, an expensive and disruptive method.*

   Where downhole conditions cannot be verified or are inconclusive, the Department shall prepare a Hydrologic Impact Assessment for the project. This will assess the local/regional geologic and hydrologic setting, the known history of the project, and any other information available (drilling logs, mud or cement notes, etc.). The conclusion shall be a determination of the probability (a) of

contamination, and (b) that the operation meets the requirements of 17.24.1114(1). (See Appendix 3, Hydrologic Impact Assessment.)

All such projects should still undergo post-drilling inspection for surface reclamation and revegetation, at some point prior to bond release when revegetation success can be evaluated.

For all bond release inspections:

1. *The inspector shall contact the prospector and landowner before making any bond release inspection:*

   A To obtain maps if the files do not have them.

   B To inquire if the landowner has found any problems and to allow them to participate in the inspection.

   C To ask the prospector if they wish to go on the inspection. This is very helpful because they may know the exact location of the holes.

2. *The bond release inspection report will consist of two parts:*

   a. Complete form found in the appendix.

   b. A memo with findings, stipulations, and recommendations.

WATER WELL TRANSFER

1. *The transferor will have their bond released after all of the conditions of water well transfer have been met. Until then, the transferor will remain liable for reclamation, etc.*
2. *When a well is approved for transfer, you can either sign the Application for transfer form and return a copy of it to the company, or you can wait until final bond release and indicate under item 3 on the release form which holes are approved for transfer.*

Appendix 1

POST-DRILLING DOWNHOLE INSPECTIONS:

Winkie Drilling

For projects where contemporaneous inspection of downhole compliance was impossible or inadequate, the project may be subjected to downhole inspection using the Winkie Drill, as follows:

I Partial Bond Release

After one year from initial seeding, a coal or uranium prospecting drill hole is eligible for partial bond release. Upon receiving a partial bond release request, the Department will drill out a minimum of 10% of the total request. If 10% of the request is less than 2 holes, a minimum of 2 will be drilled out. If 10% of the request is greater than 10 holes, the Department will drill out 10 holes. (See example below.)

10 holes requested x .10 = 1 hole; drill out 2.
80 holes requested x .10 = 8 holes to be drilled out.
120 holes requested x .10 = 12 holes; drill out 10.

If the drilled out holes pass inspection and all holes pass the surface inspection, a partial bond release shall be granted. (See "Inspections" in guidelines for surface inspection.)

If one or more holes are deficient, the prospector will be notified, in writing, of the deficiencies and be required to correct them. The prospector will check all other holes not inspected to verify that they are in compliance with the Rules and Regulations.

Upon notification of the corrected deficiencies, the Department will re-drill 50% of the deficient drill holes and an additional 5%, minimum of one, of the uninspected holes. If any holes are not in compliance, the prospector will again have to correct them.

During the follow-up inspection, the procedure outlined in the above paragraphs will repeat, until all deficiencies are corrected. If no new deficiencies are found, a partial bond release shall be granted.

A Full Bond Release

After five years from initial seeding, a coal or uranium prospecting drill hole is eligible for full bond release. Any unresolved deficiencies from previous inspections must be resolved before a full bond release inspection will be made. Then if all holes pass the full bond release surface inspection, a full bond release shall be granted. (See "Inspections" in guidelines for surface inspection.)

In special cases, or where a partial bond release inspection was not made, the Department will follow the same procedure outlined under Partial Bond Release, Section IA.

II Unbonded Coal and Uranium Prospecting Drill Holes

A State or Federal Agencies

State or Federal agencies that prospect for coal or uranium must be inspected and permitted using the same procedure outlined under Section IA and IB. (A cooperative agreement is currently being drafted by the Department of Environmental Quality with the Department of the Interior allowing the DEQ to regulate Federal drilling.)

III Additional Drilling

If there is any reason to warrant a drilling inspection, it should be made. The number of holes to be inspected will be left up to the discretion of the inspectors.

IV Inspection

The following is the minimum an inspector should check for at each hole:

A The drill hole will have a five foot cement surface plug.
B The cuttings shall be spread to less than 2 inch of the earth's surface.
C Only 1/10 of an acre should be disturbed, unless otherwise permitted.
D Evidence of successful revegetation.
*E Wood stake marking the site and identification number.**
F Mud pits
a If topsoil was replaced, recontoured, and seeded.
b If subsidence or overmounding has occurred.

V Trespassing

When an inspection is going to be made, the owner, agent, or lessee shall be given notice of such inspection and may participate with the Department in making the bond release inspection. (17.24.1113)

Appendix 2

PLUGGING PROCEDURES FOR WINKIE DRILL HOLES

I Pour 5-10 lbs. of 20 mesh Na-Bentonite into the drill hole to absorb the water entering the drill hole from our drilling. (If a void between the surface plug and Bentonite does not exist, this procedure may be avoided.)

II Place a small 2¾" rubber plug at the bottom of the cement plug.

III Pour homogenous cement slurry into the hole and fill the void to the top of the cement plug.

IV Backfill the hole accordingly.

V Wash down the cuttings to less than 2" of the earth's surface generated from our drilling.

VI Rake the site level.

VII Seed the site if after October 15 or before May 15.

VIII Restake the hole.

IX Take a photo to prove your reclamation.

Appendix 3

HYDROLOGIC IMPACT ASSESSMENT

Where downhole conditions cannot be verified or are inconclusive, the Department shall prepare a Hydrologic Impact Assessment for the project. This assessment will assess the local/regional geologic and hydrologic setting, the known history of the project, and any other information available (drilling logs, mud or cement notes, etc.). The conclusion shall be a determination of the probability (a) of contamination, and (b) that the operation meets the requirements of 26.4.1114(1). (See Appendix 2, Hydrologic Impact Assessment.)

Appendix 4

MUD PIT VOLUME CALCULATIONS

DETERMINING IF EXCAVATED MUD PITS HAVE SUFFICIENT VOLUME FOR THE SITE-SPECIFIC PROSPECTING HOLE:

I Determine volume of drill hole in bbls.

Information needed:

A Diameter of the hole.

B Depth of the hole.

Example:

a. Diameter of the hole = 5".

b. Depth of the hole = 400'.

$\frac{D^2}{1030}$ x depth = volume of the drill hole in bbls.

$\frac{5^2}{1030}$ x 400' = 9.7 bbls.

II Determine the volume of the excavated mud pit.

Information needed:

A Length, width, depth.

Example:

Length = 10', Width = 4', Depth = 4'.

$\frac{LxWxD}{5.6}$ = volume of the excavated mud pit in bbls.

$\frac{10'x4'x4'}{5.6}$ = 28.6 bbls.

If the volume of the excavated mud pit is greater than the volume of the drill hole, it has sufficient volume and can be amended to the prospecting permit.

In general, portable mud pits are effective for prospecting holes drilled to at least 300'.

III Excavated mud pit designs.

An excavated mud pit should be kept to the minimum in design and only amended if requested to avoid unnecessary disturbance.

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